HOECHSTMASS Balzer GmbH

User Manual Gamma

English

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2 Electronic Tape Measure GAMMA

Fast and flexible measurements – wireless transmission – digital processing

GAMMA determines your measuring data very quickly via sensors. The data is transmitted to the PC wirelessly and easily by keystroke.

GAMMA is the ideal equipment for

- Individual made-to-measure clothing
- Industrial made-to-measure clothing
- Production
- Quality control

Our new patented system offers the user essential advantages and facilitates work considerably.

2.1 All advantages at a glance

FAST
Accurate measurements within a fraction of a second

NETWORKED
Considerable time savings due to automatic data transmission

DIGITAL
Measuring data can immediately be used in further PC applications

RELIABLE
No manual input data errors

EASY OPERATION
Instructions directly via display

WIRELESS
Wireless Bluetooth connection to the PC – Data transmission up to 10 m

FLEXIBLE
Freely programmable function keys for individual requirements

INDEPENDENT
Conventional measurements without PC transmission also possible

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3 Contents of the Package

- Electronic tape measure **GAMMA**
- Bluetooth USB adapter
- Power supply unit
- User Manual
- Charging station (**optional**)

Should parts be missing or damaged please contact your local dealer or the service staff of HOECHSTMASS Balzer GmbH.

4 Introduction

The electronic tape measure **GAMMA** has been developed to more quickly and more flexibly carry out measurements in

- Individual made-to-measure clothing
- Quality control of different production processes

The electronic tape measure **GAMMA** is very similar to a conventional tape measure in its appearance. However, it contains a bar code in addition to the conventional graduation. When working with the tape measure a distinction is made between two basic modes, the non-Bluetooth and the Bluetooth mode.

In the mode without Bluetooth connection the tape measure is pulled out of the housing and the measured value is read off directly from the display at the tape measure. In the Bluetooth mode the tape measure is connected to a PC via Bluetooth. Here again, the tape measure is pulled out of the housing and by pressing the Enter key on the housing the measured value is shown in the display directly. At the same time, however, the value is transmitted to the PC.

The wireless transmission of the measured values affords the advantage of higher speed, flexibility and failure minimization as compared with conventional measuring.

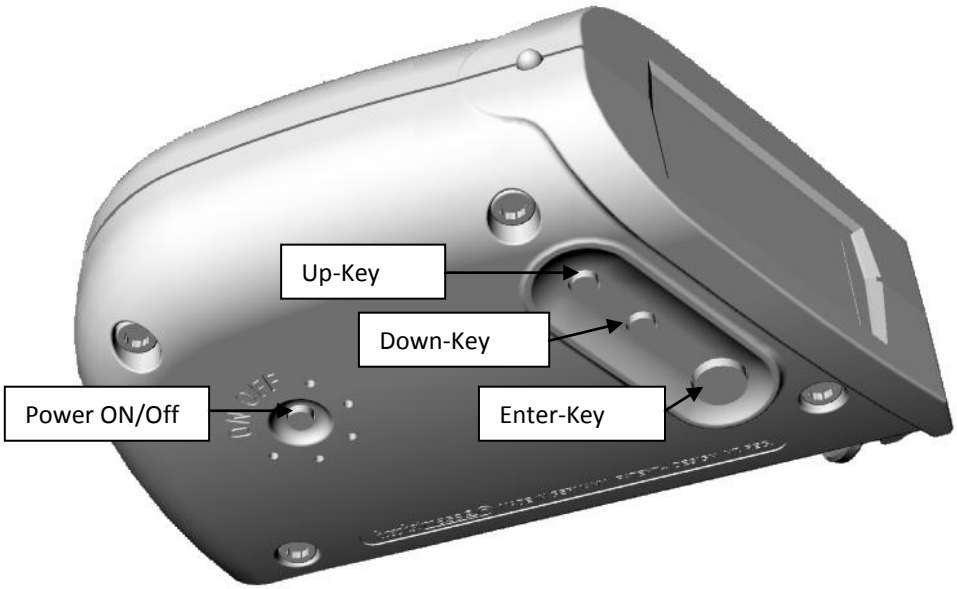
The electronic tape measure **GAMMA** is supplied in a standard set with a Bluetooth Stick and a power supply unit for loading purposes.

You can download the configuration software with key emulation (**GAMMATrans**) on the site www.altronik.de/gamma **for free**. After installing this software the electronic tape measure **GAMMA** can be used directly in WINDOWS, for applications like Word, Excel, or Access.

Optionally, a charging station is available for the tape measure **GAMMA**, as well as the software application **GAMMAEx**. This software enables direct connection between EXCEL and the electronic tape measure **GAMMA**. In this way, individual worksheets can be created under EXCEL, which communicate with the electronic tape measure, i.e., field names within an EXCEL table are shown in the display of the electronic tape measure **GAMMA**, for example as a job instruction.

5 Description

5.1 Product Overview



Socket:
5V; 400mA; plus pole inner conductor

5.2 Contents of the display

Arrangement in the display

The current function of the keys is shown in the display closest to the keys themselves. This function may vary from menu to menu.

The current value is displayed directly below the corresponding function symbol.

The last transmitted value is shown with large characters.

Symbols on the display:

Battery charge condition; flashes when on a critical level

Bluetooth on, wireless connection established

Bluetooth on, no wireless connection

Ready to measure circumference and/or diameter

Diameter; **Warning:** Only the value on the display is valid. The value on the tape is no longer valid.

Addition: by pressing the DOWN-key the values are added together

5.3 Structure of the menu

To enter the menu, hold the **UP-key** while pressing the **On/Off-Key**

menu item (**factory settings**)	Function
- Cancel	Return to the measure mode
- Setup	
○ Unit	Indicates unit of measure on the display. Transmission to the computer only in steps of 0.01cm. With help of **GAMMA**Trans the unit of measure may be converted into inch or any other unit of measure.
▪ **0.0 cm**	
▪ 0 mm	
▪ 0.0 mm	
▪ 0.0 inch	
▪ 1/16 inch	
▪ 1/32 inch	
○ Bluetooth	Here you can change the Bluetooth-Settings. Standard is "**Master"**. For manual measuring choose no connection.
▪ **Master (Auto)**	
▪ Slave (Incoming)	
▪ No connection	
○ Calc. Functions	
▪ Addition on/**off***	Activates/deactivates* addition of the values
▪ absolute on/**off***	Distance to a given measure value on/off*
▪ **Circumference**/diameter	Circumference or diameter (of a circular object)
○ Settings	
▪ Set auto power	Switch power off automatically after x minutes
• **5 min**	
• 10 min	
• 20 min	
• 60 min	
▪ Factory settings	Set back to the factory settings
▪ Sound **on**/off	Switch sound on/off
- Info	
○ Version:	Version of firmware
○ Ser. No:	Serial number of the tape
○ Counter:	Counts the numbers of measures taken
○ Just.:	Justification (chapter 9.3)

* absolute and addition are automatically activated on **Up-** and **Down-keys** during manual measuring

5.4 Technical Data

- **Measuring Sensor**

  Resolution: 300 DPI equivalent to 0,085mm

- **Electrical data**

  Micro controller: 8 bit
  Program memory: 125kB
  Data storage: 4kB
  Power supply: Lithium-Ion-storage battery 3,6V 1200mAh
  sufficient for approx. 20hrs. continuous operation

  Power supply unit: 5V 500mA
  charging time approx. 4 hrs.

- **Data transmission:**

  Bluetooth radio module: Class 2
  Bluetooth-specification 2.0
  Antenna Integrated chip antenna
  Integrated profiles: SPP, GAP, SDAP
  Conformity EN 300 328
  Frequency range: 2.4Ghz
  HF-output power: typ. -2 dBm (EIRP)
  Sensitivity: typ. -72 dBm

- Measuring circumference

6 GAMMATrans: Key emulation software and configuration software

6.1 System Requirements

- Windows XP/Vista/7

- Bluetooth newer than 1.1

- Free memory 10 MB

- **OPTIONAL**: some functions require Microsoft Office (Excel) from Version 2000

6.2 Installation

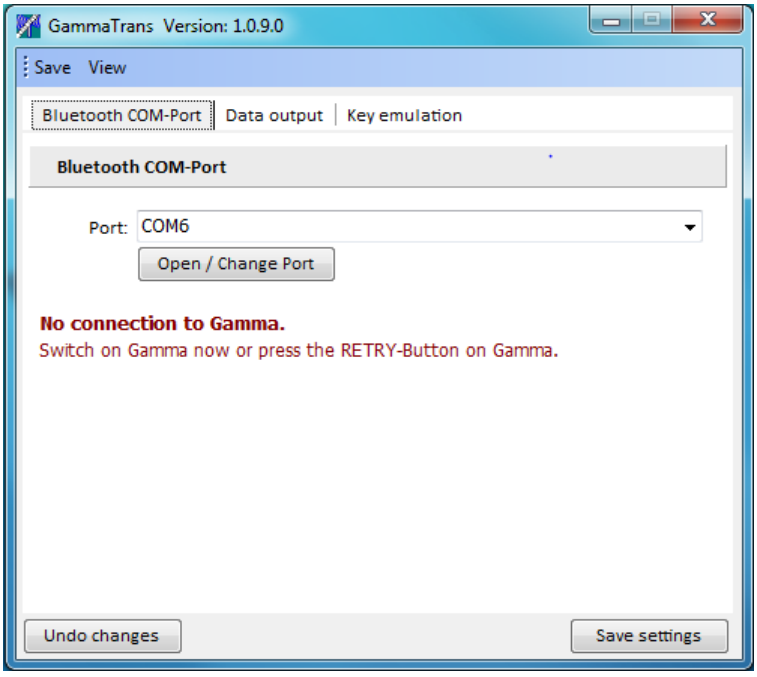
Obtain the newest Version of **GAMMATrans** in the internet: www.altronik.de/gamma
After starting the **GAMMATrans**_Setup.exe, follow the installation instructions. Upon installation **GAMMATrans** is ready for use.

6.3 Overview over the program functions

By clicking on the Save-Button, all your settings in **GAMMATrans** will be saved.

By clicking on the View-Button, you can choose to minimize **GAMMATrans** into your taskbar or minimize it to the symbol in your taskbar near to the pc-clock. It is also possible to show/hide the transferred measurement values near the **GAMMA**Trans icon.

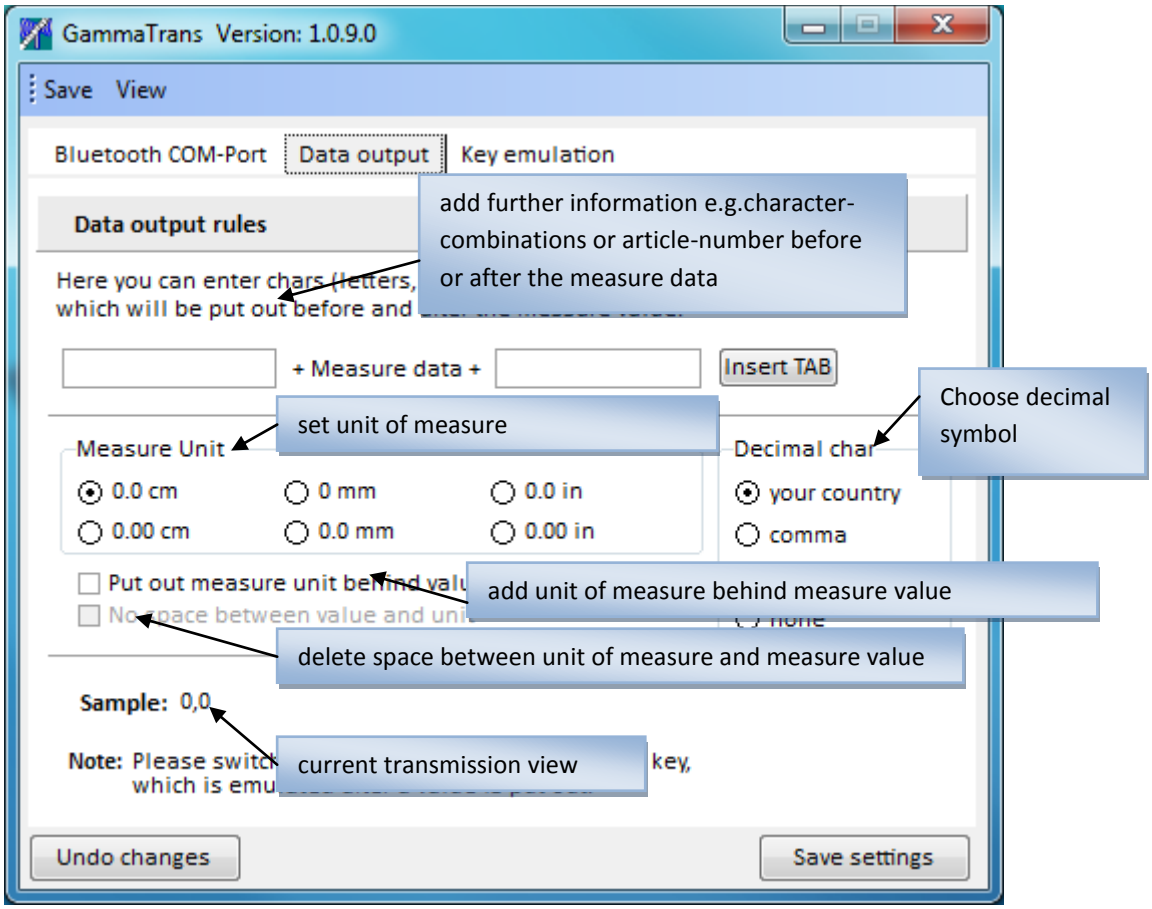
6.3.1 Tab-Sheet Bluetooth COM-Port



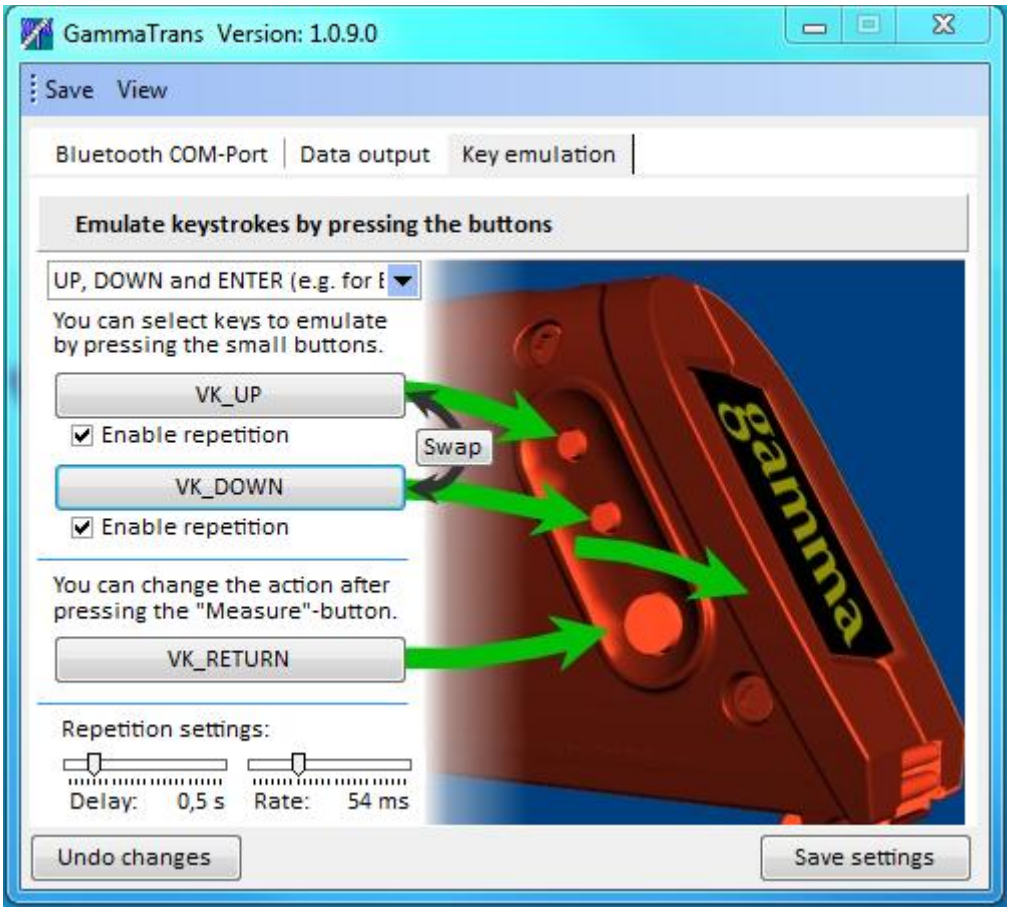
GAMMA connects with the PC via a COM-Port. In the above tab-sheet it is possible to select the right port. Below that you see the current connection status. If the connection is established **GAMMATrans** shows the following status:

Connection established.
You can use Gamma now.

6.3.2 Tab-Sheet Data output

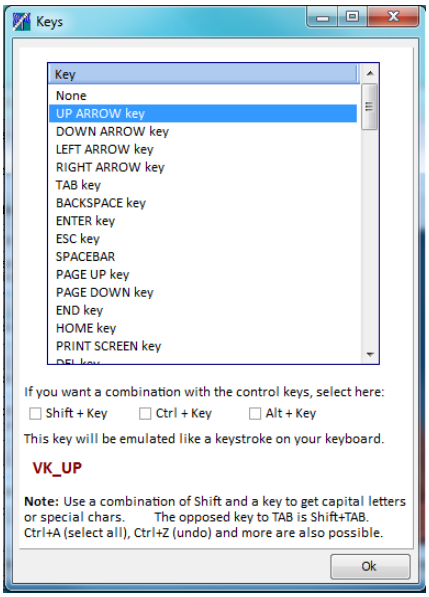


6.3.3 Tab-Sheet Key emulation



On this tab-sheet it is possible to change the button function. In the first part of the menu there are some useful suggestions for button-function-combinations. If they are not useful for your tasks, you may change them individually with the buttons VK_UP, VK_DOWN and VK_Return. The names of the buttons change accordingly.

Simply press **swap** to swap the functions of the two small buttons.


Keys
Key
None
UP ARROW key
DOWN ARROW key
LEFT ARROW key
RIGHT ARROW key
TAB key
BACKSPACE key
ENTER key
ESC key
SPACEBAR
PAGE UP key
PAGE DOWN key
END key
HOME key
PRINT SCREEN key
If you want a combination with the control keys, select here:
Shift + Key
Ctrl + Key
Alt + Key
This key will be emulated like a keystroke on your keyboard.
VK_UP
Note: Use a combination of Shift and a key to get capital letters or special chars. The opposed key to TAB is Shift+TAB. Ctrl+A (select all), Ctrl+Z (undo) and more are also possible.
Ok

Pressing one of these buttons will open a popup window like the one to the left.

With this it is possible to add certain functions to the buttons. For special tasks such as generating capital letters you may emulate additional keys like shift, ctrl or alt.

A typical setting for Excel is the factory setting (Up, Down, Enter): Measure datas are written in one column, allowing you to go up or down in this column. If you prefer to have the measure data written in one line, change the key emulation of the **OK-Key** to “**tab-key**”

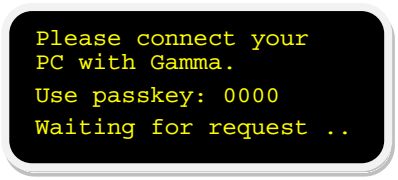
7 Connecting Tape Measure GAMMA with the Bluetooth Stick

The enclosed Bluetooth is immediately identified by the operating systems WINDOWS XP, WINDOWS Vista and also WINDOWS 7. No additional driver installation is required to use the tape measure **GAMMA**.

This User Guide only describes how to establish connection with help of the standard WINDOWS-Bluetooth-drivers

Take the following steps on the measure tape:

1. Hold the **UP-Key** while pressing the **Power-On/Off-Key** to switch on **GAMMA**. The menu-point **< SETUP >** will appear on the display.
2. To enter the Setup, please press the **DOWN-Key**
3. To scroll the menu, press the **DOWN-Key**. Choose Bluetooth and press the **Enter**-key
4. Select **Master (Auto)** and press the **Enter-Key**
5. Wait until following text appears on the display:



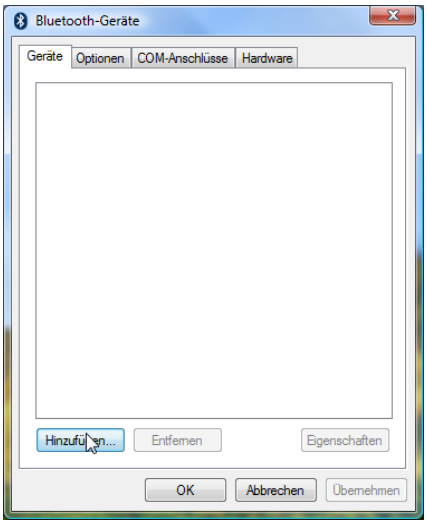
The following steps vary between Windows XP and Windows Vista/7

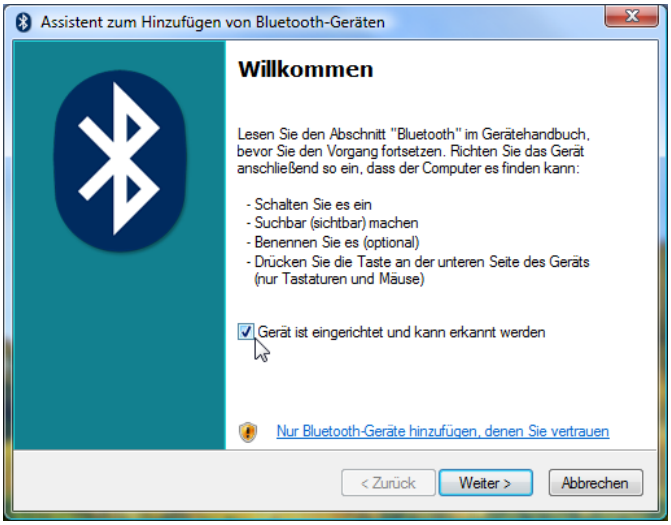
7.1 Windows XP

Take the following steps only when using the original Bluetooth-driver from Windows XP

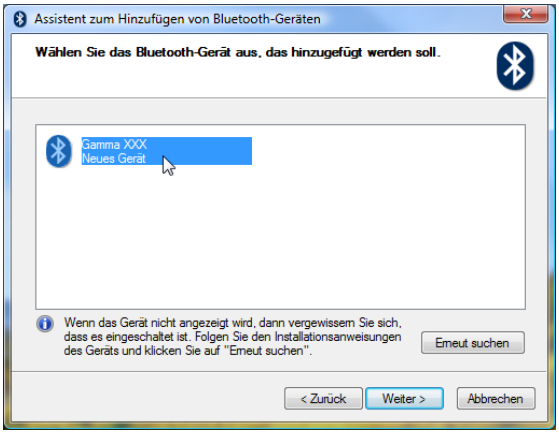
6. After inserting the Bluetooth-adapter, open the system control (in the start menu on the right side)
7. Click on "**Classic view**" (on the left) and doubleclick on the symbol **Bluetooth-devices**

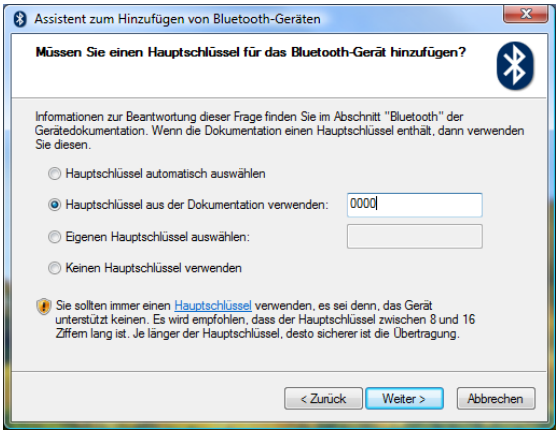
8. A new window opens and shows all Bluetooth-devices that have ever been connected to your PC. Check whether a **GAMMA** is already installed. If yes, click on it and click on the **delete** button.
9. Click on "**add**" in the new window, set the check mark and click on **continue.**



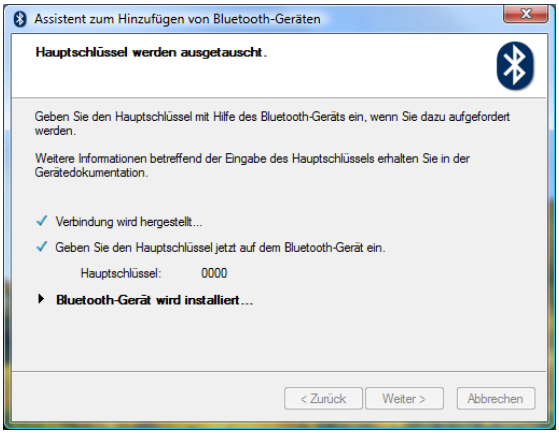

Assistent zum Hinzufügen von Bluetooth-Geräten
Willkommen
Lesen Sie den Abschnitt "Bluetooth" im Gerätehandbuch, bevor Sie den Vorgang fortsetzen. Richten Sie das Gerät anschließend so ein, dass der Computer es finden kann:
- Schalten Sie es ein
- Suchbar (sichtbar) machen
- Benennen Sie es (optional)
- Drücken Sie die Taste an der unteren Seite des Geräts (nur Tastaturen und Mäuse)
Gerät ist eingerichtet und kann erkannt werden
Nur Bluetooth-Geräte hinzufügen, denen Sie vertrauen
< Zurück
Weiter >
Abbrechen

10. Choose the device named **GAMMA**... and click on **continue.**
Choose "**use key from the documentation**", type in **0000** into the edit-field and click on **continue.**


Assistent zum Hinzufügen von Bluetooth-Geräten
Wählen Sie das Bluetooth-Gerät aus, das hinzugefügt werden soll.
Gamma XXX
Neues Gerät
Wenn das Gerät nicht angezeigt wird, dann vergewissern Sie sich, dass es eingeschaltet ist. Folgen Sie den Installationsanweisungen des Geräts und klicken Sie auf "Erneut suchen".
Erneut suchen
< Zurück
Weiter >
Abbrechen


Assistent zum Hinzufügen von Bluetooth-Geräten
Müssen Sie einen Hauptschlüssel für das Bluetooth-Gerät hinzufügen?
Informationen zur Beantwortung dieser Frage finden Sie im Abschnitt "Bluetooth" der Gerätedokumentation. Wenn die Dokumentation einen Hauptschlüssel enthält, dann verwenden Sie diesen.
Hauptschlüssel automatisch auswählen
Hauptschlüssel aus der Dokumentation verwenden:
0000
Eigenen Hauptschlüssel auswählen:
Keinen Hauptschlüssel verwenden
Sie sollten immer einen Hauptschlüssel verwenden, es sei denn, das Gerät unterstützt keinen. Es wird empfohlen, dass der Hauptschlüssel zwischen 8 und 16 Ziffern lang ist. Je länger der Hauptschlüssel, desto sicherer ist die Übertragung.
< Zurück
Weiter >
Abbrechen

11. **GAMMA** will be installed as a new Bluetooth-device on your PC. After that you see in the last window the incoming and outgoing COM-port. Please **note** the code of the **incoming COM-Port**.


Assistent zum Hinzufügen von Bluetooth-Geräten
Hauptschlüssel werden ausgetauscht.
Geben Sie den Hauptschlüssel mit Hilfe des Bluetooth-Geräts ein, wenn Sie dazu aufgefordert werden.
Weitere Informationen betreffend der Eingabe des Hauptschlüssels erhalten Sie in der Gerätedokumentation.
Verbindung wird hergestellt...
Geben Sie den Hauptschlüssel jetzt auf dem Bluetooth-Gerät ein.
Hauptschlüssel: 0000
Bluetooth-Gerät wird installiert...
< Zurück
Weiter >
Abbrechen

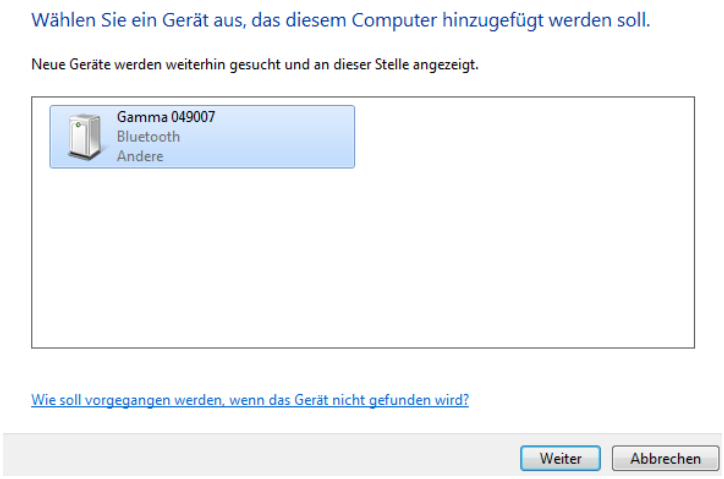
Assistent zum Hinzufügen von Bluetooth-Geräten
Fertigstellen des Assistenten
Das Bluetooth-Gerät wurde an den Computer angeschlossen. Der Computer und das Gerät können kommunizieren, wenn sich beide in Reichweite befinden.
Folgende COM-Anschlüsse (seriell) wurden dem Gerät zugewiesen.
Ausgehender COM-Anschluss: COM5
Eingehender COM-Anschluss: COM6
Weitere Informationen über Bluetooth-COM-Anschlüsse
Klicken Sie auf "Fertig stellen", um den Vorgang abzuschließen.
< Zurück
Fertig stellen
Abbrechen

12. For the next steps please read 7.1.3

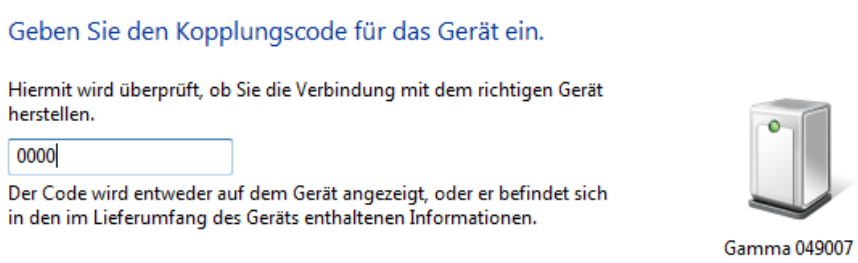
7.2 Windows Vista (SP2) and Windows 7

6. Right click on the Bluetooth-Symbol in your taskbar and click on "**add device**"

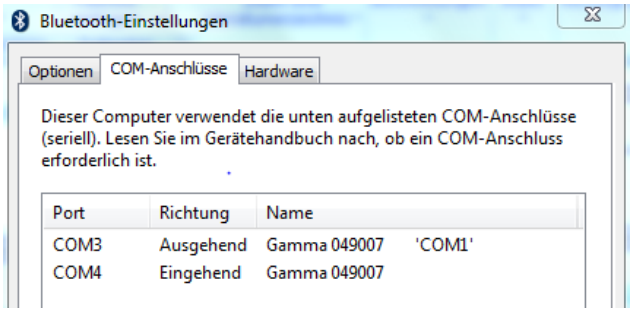
7. Choose the Bluetooth-device **GAMMA**... and click on continue
   If the tape measure doesn't appear although it has already been installed on the PC, be sure that the tape measure is on, click on the Bluetooth-symbol, click on Bluetooth network-devices and delete the **GAMMA**-device in this list. After this has been done, it should appear in the previous window.


Wählen Sie ein Gerät aus, das diesem Computer hinzugefügt werden soll.
Neue Geräte werden weiterhin gesucht und an dieser Stelle angezeigt.
Gamma 049007
Bluetooth
Andere
Wie soll vorgegangen werden, wenn das Gerät nicht gefunden wird?
Weiter
Abbrechen

8. Click now on "Insert connecting code". For all **GAMMA**-devices use the code **0000**.

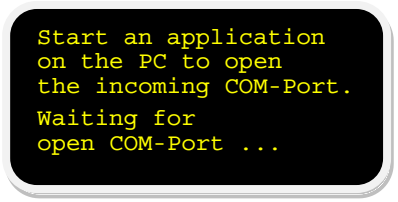

Geben Sie den Kopplungscode für das Gerät ein.
Hiermit wird überprüft, ob Sie die Verbindung mit dem richtigen Gerät herstellen.
0000
Der Code wird entweder auf dem Gerät angezeigt, oder er befindet sich in den im Lieferumfang des Geräts enthaltenen Informationen.
Gamma 049007

9. Then click again on the Bluetooth-symbol in your taskbar and choose "**open settings**" and then the tab sheet **COM-Ports**. Please note the **incoming** COM-Port


Bluetooth-Einstellungen
Optionen
COM-Anschlüsse
Hardware
Dieser Computer verwendet die unten aufgelisteten COM-Anschlüsse (seriell). Lesen Sie im Gerätehandbuch nach, ob ein COM-Anschluss erforderlich ist.
Port Richtung Name
COM3 Ausgehend Gamma 049007 'COM1'
COM4 Eingehend Gamma 049007

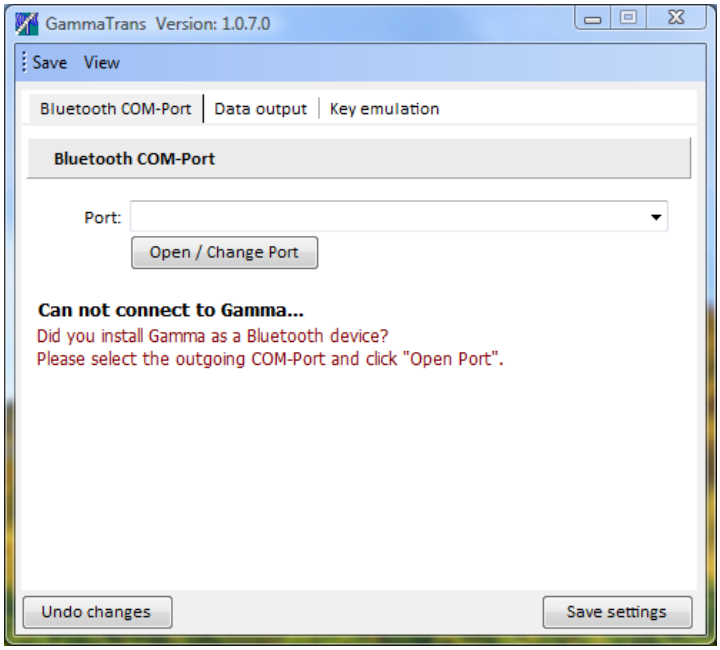
7.3 Next steps

10. The following text will appear on the tape measure:

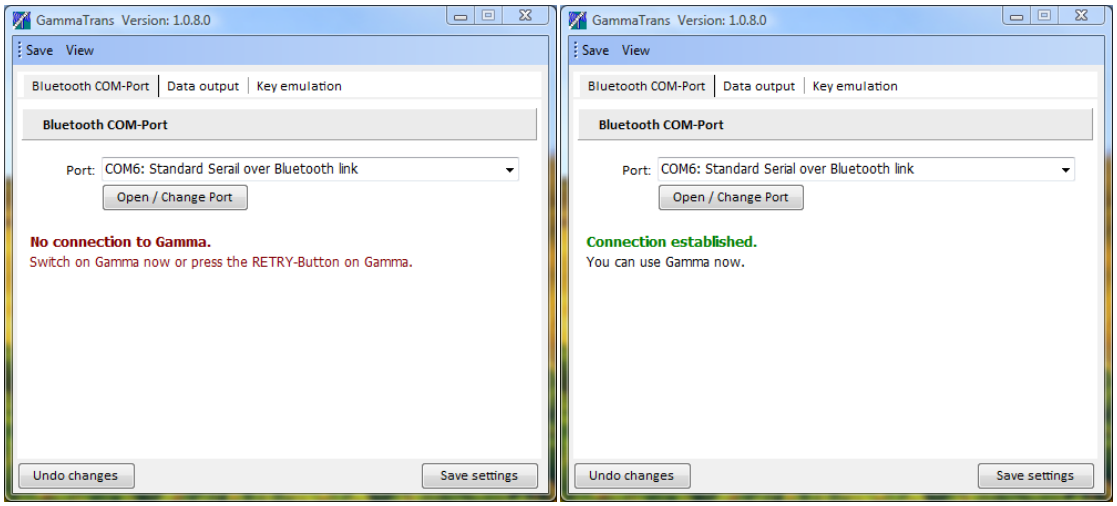


11. Open the incoming port with **GAMMATrans**, **GAMMAEx** or any other suitable program which opens the port.

12. Proceed as follows with **GAMMAtrans**:
Click on the small arrow on the right side and choose the incoming COM-port; then click on "**Open/Change Port**".



13. Wait a few seconds. Then **GAMMA** accepts the connection and you will hear a number of acoustic signals. The **GAMMATrans** window minimizes to the **GAMMATrans**-Symbol in your taskbar. By doubleclicking on this symbol you can open **GAMMATrans** again.



8 Operating the Tape Measure

How do you want to use **GAMMA**?

a) measuring without Bluetooth connection (no transmission of the measured values)
b) Transmission of the measure values via Bluetooth
   - transmission of the measured data to a desired program by **GAMMAtrans**
   - transmission of the measured data with software **GAMMAEx** (optional)
   - transmission via Bluetooth to a terminal-program

8.1 Measuring without Bluetooth connection

In this mode no data is transmitted to the PC. Installing software is not necessary.

Switch on **GAMMA** by pressing the **ON/Off**-Key.

If **GAMMA** has already been connected to a PC in the past, it will try to connect with it. By pressing the **Enter**-Key (no Bluet) you can interrupt the attempt to make the Bluetooth connection.
The tape measure is ready for manual measuring. If you pull out the tape, the current measure value is shown as a small number. To save a certain measured data, press the **Enter**-key.
Pressing the **Enter**-Key again to overwrite the previous measured value.

To switch off the device press the **ON/OFF**-Key again.

8.2 Transmission of the measure values via Bluetooth

Requirements

- The enclosed USB Bluetooth Stick must be connected with the PC.
- Switch on the tape measure.

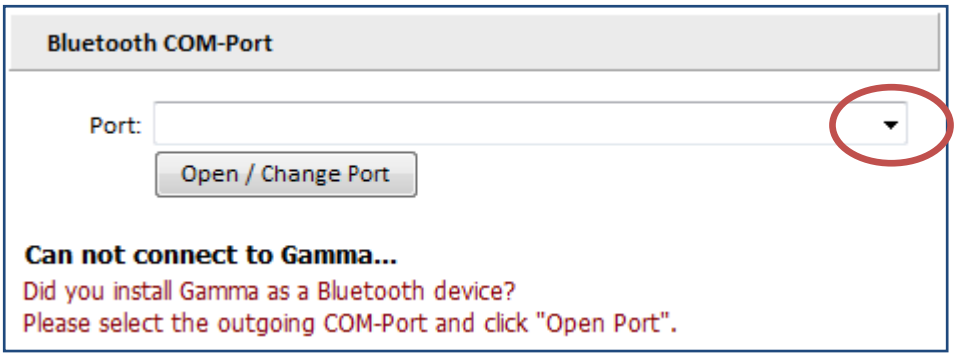
To establish connection one of the following programs must be started;

a) **GAMMATrans** and MICROSOFT Office Word, Excel or Access – or similar applications
b) Software **GAMMAEX** (**optional**)
c) Terminal program, e.g. **HyperTerminal** under WINDOWS XP or Freeware **Teraterm**

8.2.1 GAMMATrans: Data Transmission to MICROSOFT Office – or similar applications

Before you can take these steps you need to install GAMMA correctly as described in chapter 7

1. Start **GAMMATrans** on your PC
   Look at the following picture. If no port has yet been set, choose the **incoming COM-port** by clicking on the little arrow (*Win XP: See attachment: how to locate the incoming COM-port?; Win Vista/7: chapter 7.1.2 10*)


Bluetooth COM-Port
Port:
Open / Change Port
Can not connect to Gamma...
Did you install Gamma as a Bluetooth device?
Please select the outgoing COM-Port and click "Open Port".

2. Switch on **GAMMA** now by pressing the **ON/Off**-Key

   When the device is on the LED glows red and the Hoechstmass-Logo appears on the display.
   At this time, **GAMMA** tries to establish the Bluetooth-connection with your PC

3. If this fails, one of the following error messages appears:

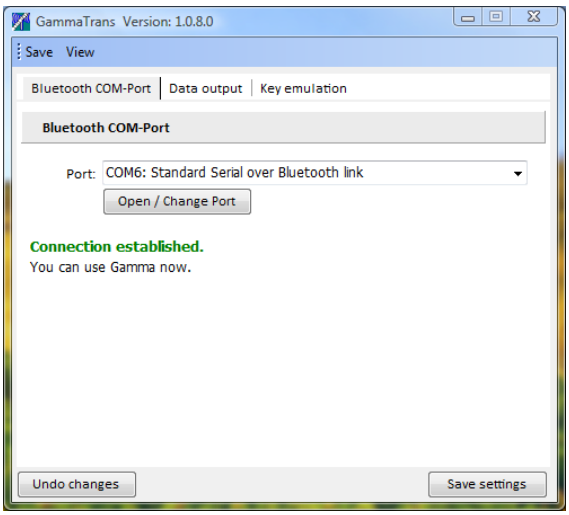
- Waiting for incoming connection...
  Please install **GAMMA** again (chapter 7)

- No connection to (COMPUTERNAME)
  Instead of “COMPUTERNAME” the name of your PC should appear. If this is not the case:
  Install **GAMMA** again (chapter 7)

  If this message appears with your PC-name and you’ve started **GAMMATrans** try the following:
  1. Check whether the Bluetooth-Stick is plugged in correctly
  2. Move Gamma closer to the PC (to a distance of up to 5m without walls)

  If this doesn’t work please try to install **GAMMA** again with help of the installation guide (chapter 7).

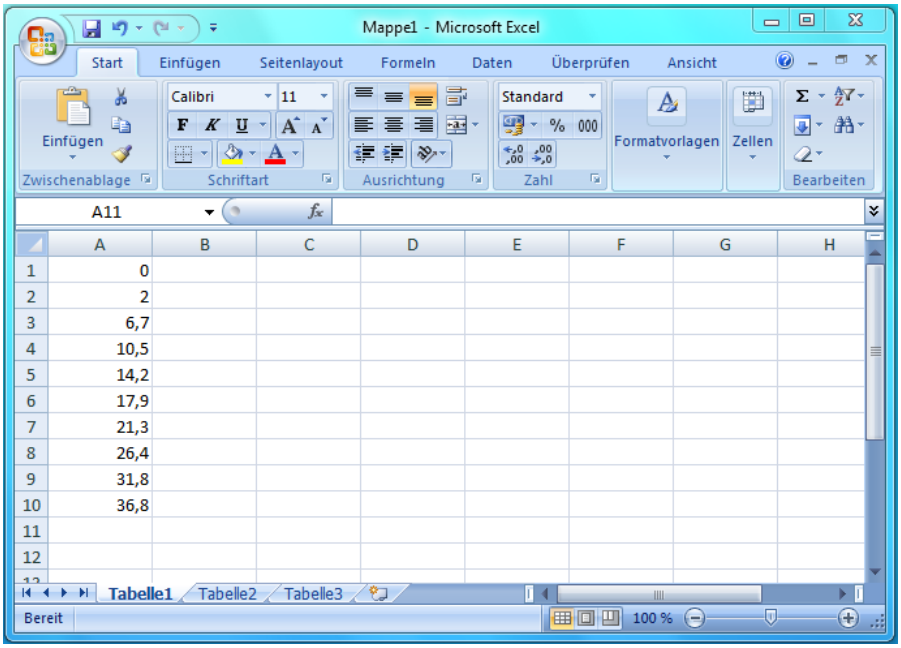
4. If the connection has been successfully established, you will hear a number of acoustic signals and the tape measure directly switches to the measure mode.
   GAMMATrans minimizes to the taskbar and may be reactivated by doubleclicking the **GAMMATrans**-Symbol



If the settings were performed according to the installation-instructions (see chapter 7), the connection between the electronic tape measure **GAMMA** and the PC will be established automatically in future.

When the desired application software, e.g. MICROSOFT Word or Excel is opened, the measured values can be transmitted.

By pressing the **Enter**-Key (Measure) the measured value is shown on the display and (by proper Bluetooth-connection) transmitted to the corresponding program. The LED flashes green. If further measures are taken, the measured value on the display is overwritten. Normally every new measure data is written into a new line in the software on the PC. After that the measure table can be can printed, saved or used in further applications.



Attention: If the tape has not been used for more than 5 minutes, the tape shuts down automatically and the Bluetooth-connection is disconnected. To adjust this setting individually, enter the Setup (Hold **UP**-Key while switching on Gamma) and choose the **shutoff-time** in the menu **Settings.**

8.2.2 GAMMAEx

8.2.2.1 System requirements:

Operation system: Windows XP; Windows Vista, Windows 7

Bluetooth: Version 1.1 and newer

Microsoft Excel: Version 2000 .. 2007

8.2.2.2 Installation / Licencing

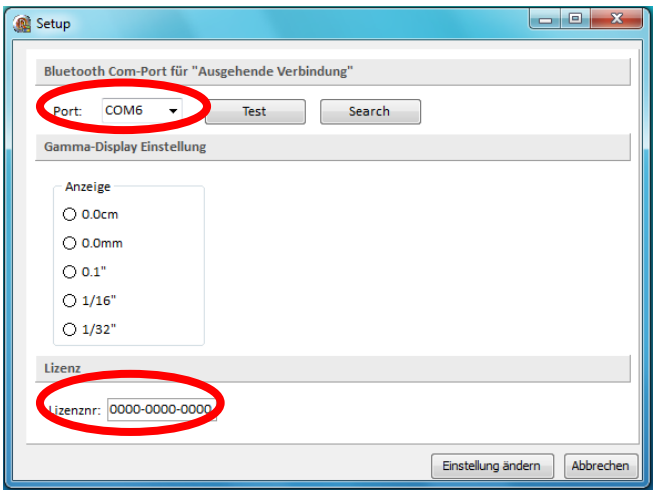
Start **GAMMAEx.exe**, read and accept the licence-agreement. Afterwards you may set the installation path and configure other settings.

After starting the program, establish a Bluetooth connection as described in chapter 8.

Licencing:

Licencing is applied on the tape measure. You may obtain the licence number from Hoechstmass.

After starting **GAMMAEx** open the menu point Data -> Settings. There you need to enter your licence number. In this menu it is also possible to set the COM-port and change **GAMMA** display settings.



8.2.2.3 Measurements

a) Basic procedure

1. Start **GAMMAEx** and switch on the tape measure. Excel opens automatically
2. When a table is opened, the program looks for given settings. They are normally set in row A1. If not, a configuration window for entering the settings opens (chapter 8.2.2.3, b)
3. If the settings already exist, your measured values are automatically entered in the table.
4. If you click on the item **File** -> **New Sta**rt a new measurement is carried out.
5. By clicking on the Button "**Open**" you can open the most recently used files and use ready-made tables
6. The COM-port should be inserted in File -> Settings
7. optional: Click on "**Display settings**" to change the content of the display

b) Create an Excel Table

Description of the example shown above:

1. The settings are determined in cell A1.
2. The starting row in this case is row 3.
3. From the column NAME to the column COLUMN-MAX you can choose another column by clicking on the arrows.
4. In column B the name of the object to be measured (e.g. arm) is set.
5. In column C the measured values are entered automatically in the table.
6. If you want to check tolerances, click the small box next to TOLERANCE TESTING.
7. In column D enter the minimum tolerance limit.
8. When a value falls below the set minimum value of measurement, the current measured value and the tolerance value are highlighted in **RED**.
9. In column E enter the maximum tolerance value.
10. When exceeding this tolerance limit value, the current measured value and the tolerance value are highlighted in **RED**.
11. When a measured value falls below or exceeds the set limit values, you will hear an acoustic signal from the tape measure and its display will read “Out of limit”.
12. **Attention**: You cannot carry out measurements until you have finished a change in a row and the word “Ready” appears in the status line.
13. If you press NEW START the cursor will jump to row 3 to start a new measurement.

8.2.3 Transmission via Bluetooth to a terminal-programm

If you prefer individual software solutions, read chapter 11 “**Data Interface Description Gamma**” for the technical details.

8.3 Special functions

Under **Setup** -> **Calc. functions** you may switch on the tape measure's special functions. They are activated automatically in the manual measuring mode.

- **Addition**: When this is activated, the function of the **Down-Key** is changed to addition. By pressing the **Down-Button** now, all the measure values are added together. The sum can be transmitted by pressing the **Enter-Button**. This is very useful to measure something larger than 1,5m. In the measuring mode without Bluetooth this function is activated automatically.
- **Absolute**: When this is activated, the function of the **Up-Key** is changed to absolute. By pressing the **Up-Key** now, an absolute-value is set. All further measure values are now shown as a difference to the absolute-value. This is useful to measure the variation to a norm-value. To set the absolute-value back to 0, press the **Up-key** when the measure tape is drawn in completely. In the manual measuring mode this function is activated automatically. Caution: Only the absolute-value is transmitted to the PC.
- **Circumference**: When this function is activated, it's possible to measure the circumference of an object. Lay the tape around the object to be measured and plug the plastic cap of the measuring tape into the provided anchorage.
- **Diameter**: When this function is selected, it's possible to measure the diameter of a round object.

9 Maintenance and Troubleshooting

9.1 Charging the battery

The battery status is shown when the **GAMMA** tape measure is switched on.
Under normal conditions, the battery can be used for the duration of a workday. But various factors may have an effect on the duration of the battery.

To charge the battery, connect the **GAMMA** to the charging cord provided or place it in the charging station.

9.2 Troubleshooting

Problem	Cause	Solution
GAMMA doesn't start when **ON/OFF**-Key is pressed	Battery empty	Charge battery
GAMMA doesn't start when connected with the charging device	Battery charge critical	Charge **GAMMA** for more than 15 minutes. Then try to switch it on again
GAMMA shows no reaction	Gamma was dropped, hit etc.	Press the **ON/OFF**-Key for 5 sec

GammaTrans – Error Messages, Causes of Failure

At program start:

Error Message	Cause of Failure
COM-Port is not set!	The COM-port is not yet set. Please select the incoming COM-port in **GAMMATrans**
Cannot connect **GAMMA**	1. **GAMMA** is not switched on 2. **GAMMA** is in the non-bluetooth mode. (Switch Gamma off and on again) 3. Bluetooth connection is not yet set up 4. **GAMMA** is outside signal zone (>10m)

9.3 Justification

Open Gammajust.exe and set the **incoming** COM-Port. Follow the Instructions in the program.

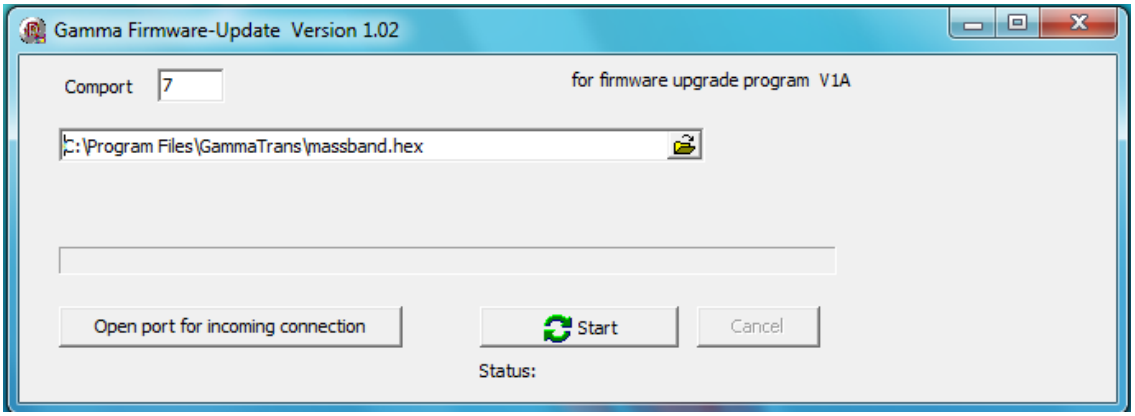
10 Firmwareupgrade

The newest version of the firmware can be downloaded on http://www.altronik.de/gamma

Here you will find the newest version of **GAMMATrans** and firmware upgrades for **GAMMA.**

Take the following steps for a firmware upgrade:

Download the newest version of the firmware and start **Bootloader.exe** in your **GAMMA**-directory. Then open the downloaded *.hex with this program.



After this step, enter the setup menu in **GAMMA** by holding the Up-Key while switching **GAMMA** on. Enter the **menu Bluetooth** and select “Slave”. Afterwards hold the **ON/OFF-Key** for 5 sec until the display switches off. Then press the **Enter-** and **Down-Key** and let go of the **ON/OFF-Key**. GAMMA sets off an acoustic signal. When the LED flashes from green to red press the **Up-Key**. You’ve successfully entered the Firmware update menu.

Click on the Bluetooth-Symbol in your taskbar and open the Bluetooth-settings. You will find the **outgoing** COM-Port in the tab sheet COM-Ports. Enter this port number into Firmwareupdate.exe in the edit-menu “Comport”. Finally click on start.

The program writes the new firmware update on **GAMMA**. If the update was successful, **GAMMA** then switches off automatically. Never interrupt or abort the update-process! This may cause serious damage to **GAMMA**. If this happens, you should hold the ON/OFF-Key for 5 sec and follow the update instructions again.

After finishing the upgrade you may need to activate Bluetooth mode Master.

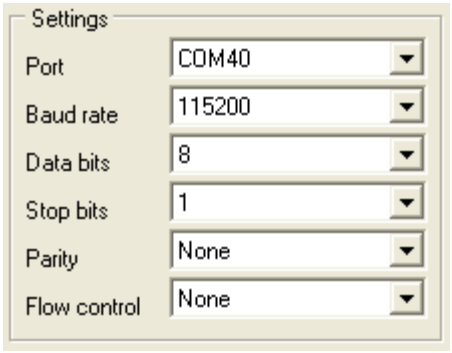
11 Data Interface Description Gamma

Control character:

```
CR=0x0D;  Carriage return
LF=0x0A;  Row feed
```

Each transmission is finished with CR

Data transmission is conducted by Bluetooth Serial Protocol via a “virtual Comport”.



GAMMA transmits:

Measured value massXXXXX
e.g. mass15210 for 152.1cm
mass70 for 0.7cm

Up-Key: up

Down-Key: down

GAMMA receives:

The first character denotes the function. After that a predetermined number of characters must be transmitted to Gamma.

```
L:   LAAAAAAAAAAAAAAAA  :This text is written in the second row of the
display. After  “L” 16 characters must be transmitted, e.g.:“LText 2.
Zeile   ”
```

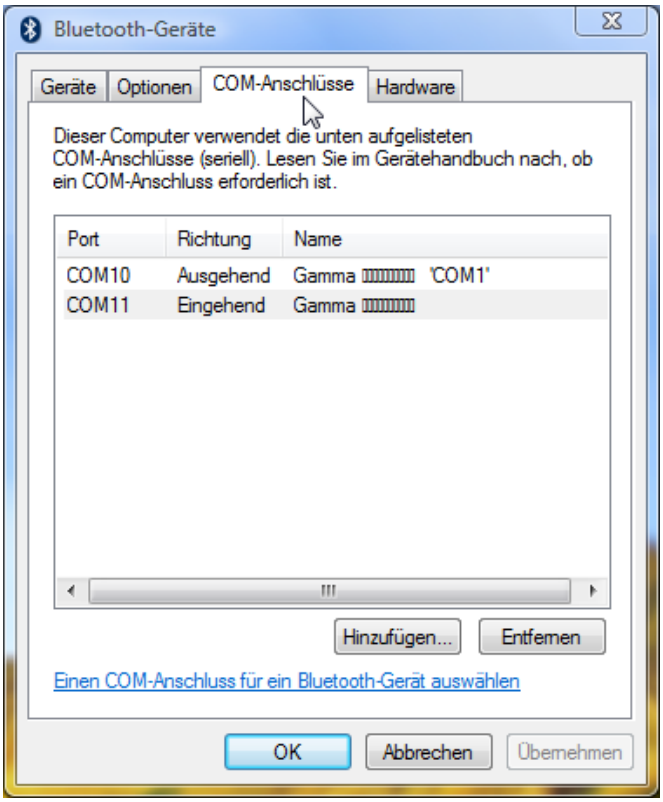
```
T:   TCCCC  :Tolerance; Behind “T” there are 4 characters
     1. character Mintolerance in cm  + 32;
     2. character Mintolerance position after decimal point  + 32;
     3. character Maxtolerance in cm  + 32;
     4. character Maxtolerance position after decimal point  + 32;
Example:
Tolerance of 10.5 up to 28.0 cm:  T+Chr(42)+ Chr(37) +Chr(60)+ Chr(32)
```

12 Attachment

This chapter is important for users of the original Windows bluetooth-driver

1. Open system control (Startmenu)
2. Choose "**Classic View**" and doubleclick on the symbol **Bluetooth-devices.**

A popup window lists all Bluetooth-devices with which your PC is or was connected. Click on the tab-sheet COM-Ports and look for the incoming port with the name **GAMMA+(serial number).**



13 Hoechstmass Limited Warranty

Hoechstmass warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to one year from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, Hoechstmass will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or remanufactured functionally equivalent product of equal value, and will be solely at the discretion of Hoechstmass. This warranty shall not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. Hoechstmass shall in no event be held liable for indirect or consequential damages of any kind of character to the purchaser.

To obtain the services of this warranty, contact Hoechstmass's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of Hoechstmass) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by Hoechstmass to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

This warranty does neither include the tape measure component inserted nor the battery. These two parts are subject to natural wear and can be replaced by the customer.